

CLAIMS:

1. A marking material for use on a surface having a surface color, the marking material comprising:
 - a binder material; and
 - a thermal-sensitive pigment;wherein the marking material exhibits a first color different from the surface color, and wherein upon being heated to a temperature of at least about 70°C, the marking material irreversibly changes color from the first color to a second color, the second color being sufficient to render the marking material effectively invisible.
2. The marking material of claim 1, wherein the thermal-sensitive pigment comprises an irreversible thermal-sensitive pigment.
3. The marking material of claim 2, wherein the thermal-sensitive pigment is selected from a group consisting of metal hydroxides, basic metal carbonates, metal phosphates, ammonium metal salts, ammonia complexes, metal salt hydrates, and combinations thereof.
4. The marking material of claim 2, wherein the thermal-sensitive pigment comprises a hydrated crystal-type thermal-sensitive pigment.
5. The marking material of claim 4, wherein the thermal-sensitive pigment comprises bismuth oxalate.
6. The marking material of claim 1, wherein the binder material is selected from a group consisting of epoxy resins, acrylic resins, urethane resins, silicone varnish, polyamine resins, polyisocyanate resins, and combinations thereof.
7. The marking material of claim 1 further comprising a material selected from a group consisting of curing agents, curing accelerators, anti-settling agents, ultraviolet absorbers, and combinations thereof.

8. The marking material of claim 1 further comprising a material selected from a group consisting of non-thermal-sensitive pigments, glass beads, ceramic beads, natural stones, artificial stones, ceramics, volatile solvents, and combinations thereof.
9. The marking material of claim 1, wherein the temperature that the marking material irreversibly changes color is less than or equal to about 500°C.
10. The marking material of claim 9, wherein the temperature that the marking material irreversibly changes color is at least about 100°C and less than or equal to about 400°C.
11. The marking material of claim 1, wherein the first color is selected from a group consisting of white, blue, and yellow.
12. The marking material of claim 1, wherein the surface color is selected from a group consisting of gray and black.
13. The marking material of claim 1, wherein the binder material constitutes about 16% to about 91% by weight of the marking material, and the thermal-sensitive pigment constitutes about 9% to about 83% by weight of the marking material.
14. The marking material of claim 13, wherein the binder material constitutes about 25% to about 67% by weight of the marking material, and the thermal-sensitive pigment constitutes about 33% to about 75% by weight of the marking material.
15. The marking material of claim 1, wherein the second color is substantially the same as the surface color.
16. A pavement marker for use on a pavement surface having a pavement color, the pavement marker comprising:
a mixture comprising a binder material and a thermal-sensitive pigment;

wherein the pavement marker exhibits a first color different from the pavement color, and wherein upon being heated to a temperature of at least about 70°C, the pavement marker irreversibly changes color from the first color to a second color, the second color being sufficient to render the pavement marker effectively invisible.

17. The pavement marker of claim 16, wherein the thermal-sensitive pigment comprises an irreversible thermal-sensitive pigment.
18. The pavement marker of claim 17, wherein the thermal-sensitive pigment comprises a hydrated crystal-type thermal-sensitive pigment.
19. The pavement marker of claim 18, wherein the thermal-sensitive pigment comprises bismuth oxalate.
20. The pavement marker of claim 16, wherein the binder material is selected from a group consisting of epoxy resins, acrylic resins, urethane resins, silicone varnish, polyamine resins, polyisocyanate resins, and combinations thereof.
21. The pavement marker of claim 16, wherein the temperature that the marker material irreversibly changes color is at least about 100°C and less than or equal to about 400°C.
22. The pavement marker of claim 16, wherein the first color is selected from a group consisting of white, blue, and yellow.
23. The pavement marker of claim 16, wherein the pavement color is selected from a group consisting of gray and black.
24. The pavement marker of claim 16, wherein the binder material constitutes about 16% to about 91% by weight of the mixture, and the thermal-sensitive pigment constitutes about 9% to about 83% by weight of the mixture.

25. The pavement marker of claim 24, wherein the binder material constitutes about 25% to about 67% by weight of the mixture, and the thermal-sensitive pigment constitutes about 33% to about 75% by weight of the mixture.
26. The pavement marker of claim 16 wherein the second color is substantially the same as the pavement color.
27. A method of using a marker with a surface having a surface color, the method comprising:
providing the marker on the surface, wherein the marker comprises a binder material and a thermal-sensitive pigment, and wherein the marker exhibits a first color different from the surface color;
irreversibly changing the color of the marker from the first color to a second color by heating the marker to a temperature of at least about 70°C, wherein the second color is sufficient to effectively render the marker invisible.
28. The method of claim 27, wherein the temperature that the marker is heated to is less than or equal to about 500°C.
29. The method of claim 28, wherein the temperature that the marker material is heated to is at least about 100°C and less than or equal to about 400°C.
30. The method of claim 27, wherein the heating of the marker comprises heating the marker with a burner.
31. The method of claim 27, wherein the thermal-sensitive pigment comprises an irreversible thermal-sensitive pigment.
32. The method of claim 31, wherein the thermal-sensitive pigment comprises a hydrated crystal-type thermal-sensitive pigment.

33. The method of claim 32, wherein the heating of the marker thereby desorbs a portion of the hydrated crystal-type thermal-sensitive pigment.
34. The method of claim 33, wherein the thermal-sensitive pigment comprises bismuth oxalate.
35. The method of claim 27, wherein the binder material is selected from a group consisting of epoxy resins, acrylic resins, urethane resins, silicone varnish, polyamine resins, polyisocyanate resins, and combinations thereof.
36. The method of claim 35 further comprising a material selected from a group consisting of curing agents, curing accelerators, anti-settling agents, ultraviolet absorbers, and combinations thereof.
37. The method of claim 27, wherein the first color is selected from a group consisting of white, blue, and yellow.
38. The method of claim 27, wherein the surface color is selected from a group consisting of gray and black.
39. The method of claim 27, wherein the second color is substantially the same as surface color.